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**Persuasive Commentary: Using the Elaboration Likelihood Model to Predict  
Attitudinal Change Online**

By

Matthew A. Chávez

Accepted in Partial Completion  
of the Requirements for the Degree  
Master of Science

Kathleen L. Kitto, Dean of the Graduate School

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Matthew Chávez  
November 13, 2013

**Persuasive Commentary: Using the Elaboration Likelihood Model to Predict  
Attitudinal Change Online**

A Thesis  
Presented to  
The Faculty of  
Western Washington University

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science

by  
Matthew A. Chávez  
November 2013

## Abstract

The current study examined the persuasiveness (based on the Elaboration Likelihood Model) of user comments on the evaluation of an Internet news article. Participants reviewed a news article concerning the implementation of a new comprehensive exam for all senior-level undergraduates, which was manipulated such that the news article information was either self-relevant (evoking central route processing) or self-irrelevant (evoking peripheral route processing). In addition, comments that followed the news article were also manipulated by both strength and quantity. Attitudes toward the topic of comprehensive exams for seniors were assessed via an attitudinal scale and thought listing task after viewing both the news article and subsequent commentary. Because individuals who process information centrally are more likely to parse information for logical development, it was predicted that individuals who centrally process information would be more likely to be influenced by the strength of comments than comment quantity. Alternatively, because individuals who process information peripherally pay attention to peripheral cues in lieu of logical development, it was predicted that these individuals would be more likely to be influenced by comment quantity than comment strength. Results suggested a possible conformity effect in both attitude and thought responses, such that comment presence alone evoked more positive attitudes and positive thoughts toward the proposed exam when compared to a no-comment control group. Additionally, contrary to the ELM, results suggested self-relevance was only a marginally significant factor when comparing attitudinal and thought response differences based on comment strength and a non-significant factor based on comment quantity. Finally, implications of utilizing consensus information (i.e., all pro-issue user comments) as well as caveats regarding the application of the ELM to online contexts are discussed.

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**Table of Contents**

Abstract .....	iv
Acknowledgements .....	v
List of Figures and Tables .....	vii
Introduction .....	1
Methodology .....	13
Results .....	18
Discussion .....	25
References .....	32
Figures and Tables .....	37
Appendix A .....	41
Appendix B .....	42
Appendix C .....	45
Appendix D .....	46
Appendix E .....	47

**List of Figures and Tables**

Figure 1 .....	37
Figure 2 .....	38
Figure 3 .....	39
Table 1 .....	40



## Persuasive Commentary: Using the Elaboration Likelihood Model to Predict Attitudinal Change Online

User comments are seen virtually everywhere on the Internet. From YouTube video comments to Yahoo! and CNN news article commentary, post-message reactions have quickly become a central component to the way people experience information sources, especially information sources found on the Internet. There are a multitude of components that often play a role in making these online messages effective such as: age of the reader (Newcomb, 1943), gender (Eagly & Carli, 1981), as well as the information the audience is thinking during message exposure (Freedman & Sears, 1965). Additional factors such as forewarning people before persuasive messaging play significant roles in message interpretation (Petty & Cacioppo, 1977). Out of all these studies, however, emerges an argument, which asserts that it is that the route in which the individual processes information that determines what level of impact a message has on him or her. While researchers have thoroughly studied persuasion prior to the advent of the Internet, more recent research findings, primarily within the context of online consumer reviews, are showing congruency with this argument. User-generated messages found online influence attitudes and future behaviors merely by the route to persuasion the person processes information (Gruen, Osmonbekov, & Czaplewski, 2006; Lee, Park, & Han, 2008; Lee, 2009; Zhang, Craciun, & Shin, 2010). The current research examines whether user commentary influences how people perceive an information source outside of the realm of consumer research (e.g., an Internet news article).

### **The Elaboration Likelihood Model**

Research studies over the years have identified a score of cues that all influence

successful persuasion. In a review article, Greenwald and Leavitt (1984) identify at least five facets that have the potential to impact the persuasion process: Orienting responses, selective listening, levels of process, cognitive elaboration, and, finally, persuasion. With the intent of synthesizing the overwhelming number of factors that play a major role in the persuasion process, Petty and Cacioppo (1986) developed a theoretical model that addresses two main routes by which individuals process information, thus providing a more efficient explanation of the persuasion process (see Figure 1). The Elaboration Likelihood Model (ELM) posits that the level of persuasion that occurs is based upon both an individual's motivation and ability to think about and evaluate components of information. These factors lead the person to take one of two different routes to persuasion when experiencing information: central or peripheral.

**Central route to persuasion.** Within the central route to persuasion, people consider ideas logically by devoting time and effort to evaluating multiple aspects of an argument, but most importantly, they primarily analyze the strength and logical soundness of an argument (Petty & Cacioppo, 1986). These people demonstrate high levels of two key elements in processing information: motivation and ability to process and thoroughly evaluate content. Motivation is a crucial component when processing information because it serves as fuel for the individual to want to further evaluate information. High levels of motivation can stem from an encountering of personally relevant issues (Petty & Cacioppo).

As there are countless factors that incessantly play a role in our environment, evoking a sense of self-relevance, or involvement, is a complex task. Greenwald and Leavitt (1986) posit four levels of involvement research studies have successfully induced in order of cognitive effort: preattention, focal attention, comprehension, and finally elaboration, with

preattention denoting the lowest level of cognitive dedication and elaboration denoting the highest level of cognitive effort. According to Greenwald and Leavitt, individuals need not be fully attentive to experience a message, but individuals put forth more cognitive effort as a function of how relevant that message is to that person and his or her experiences. Thus, message authors often aim for their messages to evoke a high sense of self-relevance to have their audiences elaborate on their messages via past memories and experiences to better facilitate their persuasive intentions.

Self-relevance has been studied by multiple theorists under many titles such as “ego-involvement” (Sherif, Sherif, & Nebergall, 1965) and “vested interest” (Sivacek & Crano, 1982). Although labeled differently, these terms all share the same idea of an internal investment an individual can experience with something. For example, when a person is interested in making an expensive purchase, such as a car, he or she may be more willing to inspect an item’s specifications and/or reviews to ensure that he or she makes the most correct purchasing decision compared to someone who is not interested in that same purchase (Petty, Cacioppo, & Schumann, 1983). This person should experience a high level of self-relevance, as this expense may be a large financial investment with a long-lasting effect, thus posing a significant consequence for the person’s life. As a result, this individual will put forth more effort to elaborate, thus allowing him or her to process information via the central route to persuasion.

Additionally, the ability to thoroughly evaluate information plays an important role in information processing, because it directly determines how much elaboration occurs. Ability to process can stem from the individual possessing a wide knowledge base concerning the message content as well as the individual being in an environment that provides resources

necessary to sufficiently elaborate (e.g., having access informational literature; Petty & Cacioppo, 1986). For example, Cohen, Stotland, and Wolfe's (1955) seminal work on need for cognition demonstrated that people who have a high need for cognition (NC), show a greater predilection to elaborate on a normal basis; these individuals naturally think critically and thus are more likely to perform high elaboration (Dole & Sinatra, 1998).

Education can also have a direct impact on the ability to thoroughly evaluate information. For example, if an individual who had a specialized education in medicine encounters an argument concerning a new medicinal discovery, not only will he or she have more general knowledge on which to base an opinion, but he or she is more likely to be aware of the limitations of arguments compared to someone without an educational background in medicine. The result in any or all of these cases is an individual who is more capable of carefully dissecting incoming information by seeking inconsistencies and weak points. Thus, with the ability to process, this individual will put forth more effort to elaborate and is more likely to process information via the central route to persuasion.

Because of the critical evaluations that occur in the central route to persuasion, the newly formed attitudes are more likely to be based on research and hard work, thus these attitudes are more likely to be both stronger and long lasting (Haugtvedt & Petty, 1992; Petty & Cacioppo, 1986). In addition, the discoveries made through elaborative processing serve as stronger counter-arguments if those attitudes are ever challenged in the future (Chaiken, 1980; Petty, Rucker, Bizer, & Cacioppo, 2004; Petty & Cacioppo, 1986). In studying attitude persistence and resiliency, Haugtvedt and Petty (1992) have examined the length of time attitudes remain consistent after encountering counterarguments in high-NC and low-NC individuals. Haugtvedt and Petty predicted that people with a high-NC would put forth

greater effort in elaboration resulting in greater central route processing. In contrast, people with low-NC are less readily willing to put forth effort into elaboration, thus these individuals will primarily process information via the peripheral route. Results in this study suggested that attitudes formed by high-NC individuals declined significantly less overall than attitudes formed by low-NC individuals when analyzed over a two-day period. Thus, high-NC individuals, who processed information in the central route as determined via manipulation checks, exhibited more sustained attitudes than low-NC individuals, who processed information via the peripheral route. Still, peripheral persuasive cues - which may not necessarily bolster the logic or soundness of an argument - are valuable, but mostly influence individuals who fail to consider a topic's logical development in their thought process, otherwise known as the peripheral route to persuasion.

**Peripheral route to persuasion.** Within the peripheral route to persuasion, audience members focus more on the face value of a message rather than its logical development. This means that in lieu of paying attention to the actual arguments of a persuasive message, the individual primarily focuses on information that does not pertain to the quality of the message found in an argument (e.g., attractiveness of the message source, source credibility, and source expertise). An individual who utilizes this route may do so due to either a lack of motivation or lack of ability to process information on a topic. Low motivation often stems from messages lacking personal relevancy (Petty & Cacioppo, 1986). As previously stated, personal relevancy poses a major influential factor in helping motivate people to evaluate information more deliberately. If, for example, someone has no intrinsic interest in purchasing a new home, then there is no reason for him or her to go out of his or her way to thoroughly research information on current home listings on the real estate market.

Furthermore, if this same individual were to encounter an argument regarding real estate, he or she would be more easily influenced by the peripheral cues present (i.e., attractiveness of the message source and/or number of arguments) as he or she would devote less attention to the integrity of the arguments therein.

Beyond self-involvement, an individual may lack the ability to elaborate for several reasons. For example, the message may be overshadowed by distracting factors in the environment or the viewer may be tired or not have the level of specialized education, resources, or time to comprehend or do the research necessary to mentally process the information discussed (Petty & Cacioppo, 1986). Petty, Wells and Brock (1976) have demonstrated this in a study examining agreement attitudes with an argument while being distracted with visual stimuli. Student participants heard either a strong or weak arguments via earphones concerning tuition levels. In addition, the researchers manipulated distraction levels, such that an X flashed on the screen either rapidly (high distraction) or slowly (low distraction) as the participants heard the message. Subsequent to the message, attitude levels and argument recall toward the audio message were assessed via self-response surveys. Results suggested a distraction by argument strength interaction, such that when participants heard the weak argument, agreement was higher for high distraction than low distraction. In contrast, when participants heard the strong argument, agreement was higher for low distraction than high distraction. Lastly, distraction levels did not influence recall levels, suggesting that even though levels of distraction influence participants' attitudes, participants are still aware of the arguments they encountered. A prototypical study that shows the full ELM at play comes from Petty, Cacioppo, and Goldman (1981), who manipulated involvement (high and low), expertise (high and low), and argument strength (strong and

weak) and examined the level of agreement subjects have regarding potentially required comprehensive examination. In order to manipulate involvement, some students were told they would have to take this proposed examination (evoking high-involvement) while others were told that the examination would be implemented within the next 10 years (evoking low-involvement). To manipulate expertise, some arguments came from a renowned Princeton professor (high expertise) while other arguments came from a local high-school class (low expertise) concerning comprehensive examinations in general. Argument strength was manipulated such that strong arguments offered information based on hard data and statistics, whereas, weak arguments contained information based on non-factual subject matter such as personal opinions and non-generalizable examples.

As explained by the ELM, when an individual experiences the condition that proposed that the examination would be implemented in 10 years (which evoked low self-relevance), this, in turn, results in low motivation and low elaboration and leads to greater sensitivity to persuasion based on peripheral cues. Thus, the individual's agreement is correlated with level of expertise, such that the argument from the renowned Princeton professor tends to influence agreement more than the argument from the high school student regardless of the strength of the argument. It must be noted, however, that this effect of expertise is stronger for those exposed to weak arguments than those exposed to strong arguments. Thus, this illustrates that when individuals process information via the peripheral route, the heuristic cue of expertise plays a crucial role in persuasion.

In comparison, when individuals experienced the condition that proposed the examination would be immediately implemented (which evoked high self-relevance), this results in high motivation and high elaboration and leads to a greater influence based on the

argument's quality, which is based on data and statistics. Thus, regardless of source expertise, the individual's agreement varied per argument strength, such that strong arguments evoked significantly higher levels of agreement than weak arguments. Thus, when individuals process information via the central route to persuasion, peripheral cues such as expertise have less of an impact overall. This is logical because the individual should have their attention invested in the arguments' logical merit more than any other component. Instead of paying attention to the expertise of the individuals, all messages are critiqued on the same level, meaning there is no added weight to the words from someone possessing high expertise. Therefore, in the central route to persuasion, individuals are only persuaded by the logical soundness of arguments, regardless of its source.

**Limitations of the ELM.** Upon its publication, the ELM was quickly adopted and implemented in persuasion studies in both offline (Petty, et al., 1981; Petty & Cacioppo, 1984) and online (Lee, Park, & Han, 2008; Park & Kim, 2008) contexts. Because of its prominence and utility in multiple applications particularly regarding persuasion via content found on the Internet, the current study has been designed around the ELM and not the Systematic-Heuristic model, a similar dual-process model of persuasion (Chaiken, 1980). It is worth noting that because of both its prominence and age, the ELM has received many critiques. For example, a withstanding argument concerns the role motivation serves in attitudinal change (Booth-Butterfield & Welbourne, 2002; Choi & Salmon, 2003). Given that motivation is one of the two central components for determining the route an individual will process information, being able to accurately and directly affect motivation is crucial to understanding what factors have the potential to persuade individuals when interpreting a message. Rebuttals to these critiques have been cited from studies examining the effect of



personal relevance (Petty, Cacioppo, & Goldman, 1981) as well as how accountable one feels concerning the information he or she has encountered (Harkins & Petty, 1981). Still, the ways in which personal relevance and accountability are manipulated are often done so as a proxy to indirectly influence the extent to which one experiences the latent factor of motivation. Thus, how to objectively and accurately affect motivation remains understudied, particularly in ELM studies with the goal of successfully predicting the route an individual is more likely to utilize.

### **Evolution of Communication**

As stated previously, many changes have taken place in the realm of persuasion research; likewise, great changes have occurred in the ways that individuals communicate and obtain information with the advent of the Internet. A recent national survey has suggested that both newspapers and radio news are becoming an antiquated source for obtaining news information, as online and mobile news has become the second most popular sources for news, behind television, among average news-seekers in the United States (Pew Research Center, 2012). Further, relative to communication behaviors prior to the development of the Internet, interactions have become more nuanced; now, not only do individuals have more control over the time and place they wish to interact with others, but also the physical distance between individuals no longer poses as an obstacle when others desire to communicate (Guadagno & Cialdini, 2005). Thus, individuals can now make limitless interactions at will, leading to new areas of interest concerning how individuals obtain and share information. Still, in recent years, the Internet has gone through a major evolution as well. Now, user-generated information is providing more influence than ever before. This format is evident in websites such as Wikipedia which is entirely user-dependent

by allowing the creation and editing of webpages all from its users, to other mainstream websites such as CNN and Yahoo!, which only allow user commentary on news articles. As a result, user commentary has now become a staple to information that users encounter when accessing information via the Internet. No longer is reading a news article a solitary experience; users can now comment on the pages featuring news articles even with or without reading the news article.

Reading and writing commentary on the news articles are certainly optional but are very prevalent in these websites. Because of this prevalence coupled with the additional worry that individuals have the potential to post disparaging comments about either news articles and/or videos, many sites now provide an option to disable user comments. However, not enough research concerning post-message reactions in a digital paradigm has been conducted to rightfully assert that post-message comments alone have such a strong effect on individuals to influence individuals' evaluations of the original information source.

### **Consumer Ratings**

One particular area of research that has studied the effect of online commentary alongside the ELM is within the paradigm of online consumer ratings. Online consumer ratings have been regarded as an electronic form of word-of-mouth (eWOM) (Lee, Park, & Han, 2008). For example, when individuals are interested in making an online purchase for an item such as clothing, they are able to access user comments regarding clothing garments prior to their purchase, possibly having an impact on consumer behavior (e.g., purchase intention). This is an important distinction from traditional word-of-mouth communication in that individuals are completely unrestrained from location and social norms of conversation being a determining factor for communicating their opinions with others. Additionally, both

positive and negative customers' reviews regarding the same item are concurrently provided for others to view.

Lee, et al. (2008) studied this concurrent exposure feature of eWOM by manipulating the proportion of negative to positive consumer reviews to be either high (e.g., four of eight reviews were negative) or low (e.g., two of eight consumer reviews were negative) while manipulating self-involvement of the participant (high or low involvement). The researchers manipulated involvement by telling high involvement participants their university department was interested in purchasing an MP3 player for a select number of students, with the participant being included in the select group. Conversely, low involvement participants were also told that their university department was interested in purchasing an MP3 player, however, these participants were not part of the select group. In addition, quality of comments (high or low) was manipulated such that high quality comments addressed more objective aspects of the product such as functionality whereas low-quality comments addressed more subjective and emotional aspects that reflected only personal opinions and not functionality. Results suggested that purchase intention for high involvement participants was influenced more by high-quality arguments than low-quality arguments regardless of the valence of reviews, while low-involvement participants were influenced more by high proportions of negative user comments regardless of the quality of the arguments. Thus, proportions of comments have the potential to be influential on individuals' attitudes and behaviors by evoking a conformity-type effect, but this effect may be more evident for individuals who experienced the low involvement conditions than individuals who experienced the high involvement conditions. In relating this conformity-type effect to the ELM, participants may have been implementing a heuristic that "the majority must be right,"

and by asserting this heuristic, this demonstrates the lack of cognitive effort given due to the participants' low self-involvement (Chaiken, 1980).

In addition to the number of comments viewed, other comment features appear to demonstrate influence on consumer-purchasing intention. Park and Kim (2008) manipulated consumer comment attributes for research participants to read such as quality (i.e., high quality and low quality) as well as number of comments (i.e., low quantity and high quantity) found on websites for products were manipulated with respect to levels of experience in online shopping (i.e., low expertise shoppers and high expertise shoppers). Participants were asked to read a printed sheet of a website and its consumer reviews of a product sold on the website. Following this task, researchers asked the participants to complete a self-report survey assessing intent to purchase a media player. Results suggest that the neophyte customers indicated a higher level of influence on purchase intention than expert online consumers via the manipulation of the number of comments. Thus, the quality of comments has more of an impact on purchase intention for expert online consumers than neophyte online consumers. Interpreting these results within the context of the ELM, expert consumers may be equivalent to centrally processing individuals. These expert customers have the ability, which in turn more likely predicts motivation to elaborate and they are more likely to put forth more effort to elaborate; this is evident in the influence of attitude based on comment quality over quantity. In contrast, novice online consumers may be peripherally processing individuals, because these novice customers lack the ability to elaborate, thus violating the fundamental tenant of the ELM. This result is evident in their influence of attitudes based on comment quantity over quality.

## Summary and Overview

In this study, participants read one of two online news articles, which were manipulated such that the news article information was self-relevant (evoking central route processing) or not self-relevant (evoking peripheral route processing) concerning the implementation of a comprehensive exam for graduating seniors in college. The comments that followed the news article were manipulated by quantity and quality, thus appealing to the processing route that the participant utilizes, which is determined by the level of self-relevancy. Because individuals who process information centrally are more likely to parse information for logical development, it was predicted that individuals who centrally process information (high involvement group) would be more influenced by comment strength and uninfluenced by the quantity of comments. Alternatively, because individuals who process information peripherally devote attention to aspects of comments other than logical development, it was predicted individuals who peripherally process information (low involvement group) will be more influenced by comment quantity than comment quality.

## Method

### Participants

Three hundred undergraduate students (93 males, 204 females, and 3 reported as other) between the ages of 18 and 47 years ( $M = 20.67$ ,  $SD = 3.07$ ) from Western Washington University were recruited for an “Impact of Online News Articles” experiment via Sona, an online research system that allows students to view and sign up for ongoing research studies on campus, Viking Village, a university-specific online public forum, and undergraduate online courses per the professor’s approval. Participants earned either one half of a research credit for their respective course or were entered into a raffle to win one of two

\$25.00 Amazon gift cards in exchange for their participation that took approximately 30 minutes.

### **Design**

A 2 (self-relevance: high self-relevance vs. low self-relevance) X 2 (comment strength: strong comments vs. weak comments) X 2 (comment quantity: high comment quantity vs. low comment quantity) factorial experiment (with two additional no comment control conditions) was performed to examine the persuasive impact of comments following an online news article after reading both a news article and its post-comment reactions.

### **Procedure**

The entire study took place on an online survey designed via Snap Surveys 10.0. Participants first clicked on a link, which presented one of two informed consent sheets with demographic questions. Next, participants were presented with a page that contained a news article with attached user commentary (except for two no-comment control conditions). In order to ensure participants read all contents of the page, the header of the page contained a statement to read all content carefully as the upcoming questions pertained to the content of the news article and user commentary (if applicable) and were required to select a designated box to indicate they had read all items on the webpage. The participants then reported their attitudes toward comprehensive examinations, completed a thought-listing task supplemented with manipulation check inquiries, as well as an open-ended question of suspicion. Finally, participants were thanked for their time and debriefed after submitting their responses.

### **Materials**

**News article.** Participants read a news article, which discussed the need for an implementation of a comprehensive examination for senior-level undergraduates at Western

Washington University. Motivation was manipulated by adjusting the phrasing for the news article such that the comprehensive examination would be required for undergraduate seniors within the near future (implementation in the next academic year) or within the far future (implementation in six academic years). The fictitious article conformed strictly to the formatting of the university's news website and featured both a news article concerning the implementation of a standardized comprehensive exam for undergraduates and subsequent comments. Within the news article were four fictitious personal accounts (two from professors and two from students) each providing arguments for and against the implementation of the exam in order to maintain a neutral perspective on behalf of the news author (see Appendix A). Besides the difference in year of proposed implementation, the news article was identical across all conditions.

**Comment strength.** To manipulate comment quality appropriately, a pilot test was conducted on 18 originally written user comments to assess differences in the strength of the comments. Nine of the comments were written to be high-quality, or strong, comments and emphasized more concrete and logical reasoning (e.g., "Obviously, the exam would help push students to work harder, making them perform better on other things like standardized tests that are necessary in professional schools."). The other nine comments were intended to be low-quality, or weak, comments that only emphasized personal opinions and values for its reasoning (e.g., "Sounds like a good idea because many of my friends all support these exams!"). Both comment types were matched for word length to control for the participants potentially utilizing comment length as a peripheral cue for information processing. Additionally, all user comments were presented with unique fictitious first and last names. While no typos were incorporated with the user comments, all user comments started with

non-capitalized words in order to make the comments seem more realistic. Fifteen pilot test participants unaffiliated with the main experiment evaluated the quality of all 18 comments on a 9-point Likert-type self-response measure featuring responses ranging from 1 (very weak) to 9 (very strong). A paired samples t-test, performed after calculating aggregate ratings for the nine strong and nine weak comment questions, suggested both the high-quality comments ( $M = 4.87$ ,  $SD = 1.05$ ) and low-quality comments ( $M = 3.04$ ,  $SD = 1.21$ ) displayed significantly different levels of strength  $t(14) = 6.87$ ,  $p < .001$ ,  $d = 1.62$ . In addition, participants rated all high-quality comments higher than all low-quality comments. Thus, these comments comprise the final list of comments used in the main experiment (see Appendix B). All comments per condition featured all of one type of comment quality. Therefore, high and low quality comments were not featured concurrently in any condition.

**Comment quantity.** Following in suit with past research from Petty and Cacioppo (1984), the quantity of comments were manipulated in the experiment in levels of low and high quantities with the purpose of appealing to individuals utilizing the peripheral route to persuasion. Within the low quantity condition, the news page included three comments. Conversely, within the high quantity condition, the news page included nine comments.

**Attitude measurement.** The first measured dependent variable assessed participants' attitudes regarding senior-level comprehensive exams. Using an adopted scale developed by Petty and Cacioppo (1984), a 7-item (good/bad, unpleasant/delightful, beneficial/harmful, foolish/wise, unfavorable/favorable, enjoyable/unenjoyable, and worrisome/untroubled), 9-point semantic differential self-report scale asking participants to respond to the statement "Comprehensive Exams for Seniors are" was administered (see Appendix C). Three of the items were reverse-coded, such that three of the anchor terms reflected positive terms on the



left side of the scale, while the other four items reflected negative items on the left side of the scale. After each item, participants were inquired “How committed are you to your previous response?,” with responses ranging from 1 (low) to 3 (high), in order to gauge the weight, or intensity, of each response.

**Thought-listing of participants.** The current study identifies two important and distinct routes of information processing (central and peripheral) based on the ELM. Therefore, determining whether individuals are processing information centrally or peripherally is especially crucial in analyzing the agreement values individuals provide on self-reports. Thought-listing tasks have been helpful in past research studies for predicting the route by which individuals process information (Briñol & Petty, 2003). A thought-listing task concerning the content of the comments was assigned to participants following the self-report surveys (see Appendix D). Individuals are provided five lines and told to list one thought per line. As discussed by Petty and Cacioppo (1984), participants typically list approximately five thoughts when undergoing thought-listing tasks. Thus, limiting the task to five lines prevents individuals from feeling forced to provide contrived thoughts. Two trained judges then analyzed thoughts to create three groups: favorable thoughts (i.e., thoughts that illustrate a positive attitude toward the news article, user comments, or both; e.g., “I’m not sure how factual it is, but this could be a good thing”), unfavorable thoughts (i.e., thoughts that illustrate a negative attitude toward the news article, user comments, or both; e.g., “Waste of my time to take a senior examination”), or neutral thoughts (e.g., “Applicable to me if enforced”).

**Supplemental inquiries.** In addition to the attitudinal measurement regarding comprehensive examinations, the participants responded to three supplemental 7-point

Likert-type questions, the first two questions functioning as manipulation checks for involvement (e.g., “I believe the topic of the news article poses high relevancy to my own education”) and logical strength of user comments (e.g., “The comments that followed the news article are logically sound”), while the final question assessed participants’ past experience with comprehensive exams (e.g., “I am familiar with comprehensive examinations”). Similar to the attitudinal scale toward comprehensive exams, participants’ reported their commitment per item. Finally, participants were given an opportunity to respond to an open-ended question for participant suspicion, (e.g., “What do you believe the researcher was attempting to study?”) (see Appendix E).

## **Results**

### **Variable Creation**

I created 10 new variables to incorporate the use of the intensity follow-up question planted throughout all survey items (including supplemental inquiries). In order to incorporate intensity items, I multiplied each survey item (reverse coded as necessary) by its intensity item. Thus, all of the following analyses utilize intensity-sensitive values. Following the incorporation of intensity items, I created an average composite comprehensive exam scale value by summing all seven intensity-sensitive items and dividing that sum by the seven items in the survey, which subsequently yielded a high level of reliability ( $\alpha = .84$ ). Thus, possible responses for the general intensity-sensitive attitude survey responses range from 1 to 27.

### **Data Reduction**

The current study was originally designed to include all levels of undergraduate students as to reflect the characteristics of the greater undergraduate population of Western

Washington University. However, because of the timing of the survey (i.e., near the end of the academic year), in conjunction with senior-level students' impending graduation, threats to participants' perceived relevancy, particularly for the 1-year condition within the self-relevancy manipulation for the news topic, were predicted prior to data collection. Thus, before formal analyses, a 1 1 1 -3 a priori contrast analysis was performed on both the one- and six-year self-relevance conditions to compare the perceived relevancy question "I believe the topic of the news article poses high relevancy to my own education," for seniors to non-seniors. This contrast analysis yielded a significant difference of perceived relevance across student levels for the one-year condition,  $t(136) = 2.69, p = .008, d = 0.46$ , with freshmen ( $M = 21.10, SD = 7.85$ ), sophomores ( $M = 18.69, SD = 6.72$ ) all reporting higher self-relevance than seniors ( $M = 15.05, SD = 8.74$ ), but not for the six-year condition,  $t(156) = 1.30, p = .19, d = 0.21$ . Because the current study relies heavily on the manipulated relevancy of the target article topic, 41 senior-level participants exposed to the one-year self-relevance manipulation were excluded from further analyses as this statistically different difference in perceived relevance poses a threat to the efficacy of the current study's self-relevancy manipulation. An additional participant was omitted from further analyses as her suspicion response revealed previous knowledge of the current study's details.<sup>1</sup> Thus, all further analyses will include data from 258 remaining participants.

### **Manipulation Checks**

I performed an independent samples t-test comparing responses to the intensity-sensitive self-relevancy manipulation check supplemental item, "I believe the topic of the

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<sup>1</sup> While some participants' responses to the suspicion inquiry questioned the authenticity of the current study, no further participants' data were omitted because all free-written responses indicated moderate levels of engagement relevant to the target article topic.

news article poses high relevancy to my own education” and self-relevancy condition levels (1 = *six years*, 2 = *one year*), which yielded a statistically significant difference between conditions,  $t(256) = -4.24, p < .001, d = -0.53$ . Thus, individuals who read the news article proposing the exam would be implemented during the next academic year reported higher perceived relevancy ( $M = 19.10, SD = 8.03$ ) than individuals who read the news article proposing the exam would be implemented in six years ( $M = 14.77, SD = 7.92$ ).

In addition to the self-relevancy manipulation check, I performed a second independent samples t-test comparing responses to the intensity-sensitive comment strength manipulation item, “The comments that followed the news article are logically sound” and comment strength condition (1 = *strong comments*, 2 = *weak comments*), which yielded a statistically significant difference between conditions,  $t(198) = 2.42, p = .02, d = 0.34$ . Thus, individuals assigned to the strong comment condition rated the subsequent comments as more logical ( $M = 11.57, SD = 5.90$ ) than participants assigned to the weak comment condition ( $M = 9.57, SD = 5.83$ ).

### **General Attitude**

In examining the attitude participants indicated toward comprehensive exams after reading the news article and comments, I performed a 3-way ANOVA with factors of self-relevance (one-year implementation or six-year implementation), comment strength (strong comments or weak comments), and comment quantity (three comments or nine comments) on the previously mentioned intensity-sensitive composite comprehensive exam scale.<sup>2</sup> No

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<sup>2</sup> I performed an additional ANOVA analyzing attitude responses without the incorporation of intensity items. The primary difference resulted in a non-significant (formerly marginally significant) two-way interaction between self-relevance and comment strength conditions,  $F(1, 193) = .902, p = .34, \text{partial } \eta^2 = .005$ .

statistically significant main effects were detected for the comment strength manipulation,  $F(1, 193) = 1.04, p = .31$ , partial  $\eta^2 = .005$ , number of comment manipulation,  $F(1, 193) = 0.12, p = .73$ , partial  $\eta^2 = .001$ , or self-relevance manipulation  $F(1, 193) = 1.30, p = .26$ , partial  $\eta^2 = .007$ .

A marginally significant two-way interaction emerged between comment strength and self-relevance conditions,  $F(1, 193) = 3.82, p = .052$ , partial  $\eta^2 = .019$ . Means across conditions are graphed in Figure 2. Follow-up pairwise comparison analysis of simple effects indicated a statistically significant difference in reported attitudes between comment strength conditions within the 6-year condition,  $t(193) = 2.37, p = .019, d = 0.34$ , but not within the 1-year condition,  $t(193) = 0.60, p = .55, d = 0.09$ . Participants who read that the change in policy would occur in six years reported more favorable attitudes toward comprehensive exams when exposed to weak comments ( $M = 10.38, SD = 4.01$ ) compared to strong comments ( $M = 8.84, SD = 2.88$ ). In contrast, no effect of attitudes toward that policy emerged for participants who read that the exam would take place in one year between strong comments ( $M = 9.31, SD = 3.79$ ) and weak comments ( $M = 8.77, SD = 3.41$ ). While this interaction between self-relevance conditions and comment strength conditions aligns with the hypothesized interaction, the direction of the attitudes do not match that posited by the ELM.

A second, unexpected, marginally significant two-way interaction emerged between comment strength and comment quantity conditions,  $F(1, 193) = 3.65, p = .058$ , partial  $\eta^2 = .019$ . Means across conditions are graphed in Figure 3. A follow-up pairwise comparison analysis of simple effects indicated a statistically significant difference in reported attitudes between comment strength conditions within the 9-comment condition,  $t(193) = 2.06, p =$

.04,  $d = 0.30$ , but not within the 3-comment condition,  $t(193) = .63$ ,  $p = .53$ ,  $d = 0.09$ .

Thus, participants who read 9-weak comments conditions reported more favorable attitudes toward comprehensive exams ( $M = 10.06$ ,  $SD = 3.90$ ) than participants who read 9 strong comments ( $M = 8.47$ ,  $SD = 3.40$ ). In contrast, the strength of the comments had no effect on attitudes when participants only read 3 weak comments ( $M = 9.33$ ,  $SD = 3.77$ ) versus 3 strong comments ( $M = 9.57$ ,  $SD = 3.00$ ). While this interaction was not of particular interest when designing the current study, it is worth noting that past research often observes the difference between high-quantity weak comments and high-quantity strong comments in opposition of the current finding. Thus, strong comments overall tend to result in more positive attitudinal reports than weak comments, regardless of one's level of motivation and/or ability to process (Petty & Cacioppo, 1984; Petty & Cacioppo 1986; Petty, et al., 2004).

No significant two-way interaction emerged between self-relevance conditions and comment quantity conditions,  $F(1, 193) = 0.33$ ,  $p = .57$ , partial  $\eta^2 = .002$ . Lastly, No statistically significant 3-way interaction emerged between self-relevance, comment quantity, and comment strength conditions,  $F(1, 193) = 1.13$ ,  $p = .29$ , partial  $\eta^2 = .006$ .

Finally, reported attitudes across all 10 conditions were below the midpoint for this survey, suggesting that this was not a well-embraced idea regardless of the manipulated conditions (see Figure 1).

### **Comment Presence**

An independent samples t-test was performed to test for attitude differences toward comprehensive examinations for seniors when collapsing across the two comment-present conditions versus the comment-absent condition (1 = *no comments*, 2 = *three or nine*

comments), yielding a significant effect,  $t(256) = -2.10, p = .04, d = 0.32$ . Thus, this analysis suggests that participants reported more favorable attitudes toward comprehensive exams for seniors when comments were present ( $M = 9.37, SD = 3.56$ ), than when no comments were present ( $M = 8.27, SD = 3.25$ ).

### **Thought Coding**

Two trained judges unaware of the assigned condition analyzed participants' thoughts following the procedures of Briñol and Petty (2003). First, all thoughts were coded to be topic relevant or irrelevant. Second, all relevant thoughts were then categorized into positive (coded as 1), neutral (coded as 0), or negative (coded as -1) thoughts. Coded thoughts were then summed and averaged per judge to calculate a score that captures an overall thought value regarding the proposed comprehensive examination for seniors. Coding judges maintained significant degree of agreement in their ratings ( $r = .73, p < .001$ ). Disagreements between judges of greater than two points ( $N = 22$ ) were resolved by discussion, which subsequently bolstered agreement between judges ( $r = .85, p < .001$ ). Finally, the ratings between the two judges were averaged and divided by the total number of topic-relevant thoughts per participant to create a final thought index (TLI) with a possible range from -1.0 to 1.0.

### **Thought Analysis**

Similar to the general attitude analysis, I performed a second three-way ANOVA with factors of self-relevance (one-year implementation or six-year implementation), comment strength (strong comments or weak comments) and comment quantity (three comments or

nine comments) on the TLI<sup>3</sup>. No main effects were detected among comment quantity conditions,  $F(1, 193) = 2.42, p = .12$ , partial  $\eta^2 = .012$ , comment strength conditions,  $F(1, 193) = 1.21, p = .22$ , partial  $\eta^2 = .008$ , or self-relevance conditions,  $F(1, 193) = 1.31, p = .26$ , partial  $\eta^2 = .007$ . Additionally, no two-way interactions emerged among comment strength by comment quantity,  $F(1, 193) = 1.55, p = .22$ , partial  $\eta^2 = .008$ , self-relevance by comment strength,  $F(1, 193) = 0.01, p = .98$ , partial  $\eta^2 < .000$ , or self-relevance by comment quantity,  $F(1, 193) = 0.48, p = .49$ , partial  $\eta^2 = .002$ . Thus, both non-significant two-way interactions of interest between self-relevance by comment strength as well as self-relevance by comment quantity do not support the hypotheses posited based on the ELM. Finally, no significant three-way interaction emerged between self-relevance, comment quantity, and comment strength conditions,  $F(1, 193) = 1.01, p = .32$ , partial  $\eta^2 = .005$ .

Similar to the survey responses, average TLI values were below the midpoint for all 10 conditions respectively, echoing the idea that this was not a well-embraced idea regardless of the manipulated conditions (see Figure 1).

### **Comment Presence**

In addition to the previously mentioned three-way ANOVA, I performed an independent samples t-test collapsing across the two comment-present conditions versus the comment-absent condition (1 = *no comments*, 2 = *three or nine comments*), which yielded no significant effect of comment presence,  $t(256) = -1.84, p = .066, d = 0.28$ . Thus, this marginally significant effect suggests participants listed more positive thoughts regarding the proposed examination when comments were present ( $M = -0.42, SD = 0.42$ ), than when

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<sup>3</sup> I performed an additional ANOVA using coded thoughts without dividing by relevant thoughts to emphasize the total amount of thoughts in lieu of the proportion of relevant thoughts. All main effects, two-way, and three-way interactions remained non-significant.



comments were not present ( $M = -0.53$ ,  $SD = 0.37$ )

### **Discussion**

The current study's purpose was to examine the influential factors of online user comments on attitudes toward the topic of an online news article. By studying persuasion in this online context, this study supplements the literature that has demonstrated how the ELM of persuasion poses utility in both offline and online domains separate from consumer attitude studies rooted in business and economics.

In beginning with successful replications first identified in past research, I was able to successfully create manipulations within the current study that had the potential to affect attitudes in line with the ELM, specifically with examples of manipulating a message's temporal immediacy (evoking varying levels of self-relevance) and argument's logic (evoking varying levels of perceived argument strength) (Petty & Cacioppo, 1984; Petty et al., 1981).

In addition to successful manipulation checks, the current study replicated results specifically from Park and Kim (2008), such that participants reported more positive attitudes toward comprehensive exams via survey responses when user comments followed the news article than when no comments followed the news article. Because all of the comments provided for the study were written in a consensus pro-exam stance, it appears that the sheer presence of comments may have influenced a general conformity effect. Furthermore, this implication of attitudinal change alone reflects a primary intent in the current study. By having a control group to compare responses to, there is evidence suggesting that attitudes have the capacity to change just by the presence of user comments. While the ELM did not originally predict this effect, additional literature has examined the impact that the presence

of others' attitudes has on one's own attitude. Cialdini has contended that consensus information can affect attitudinal positions, and function as a persuasive heuristic, as people's attitudes are particularly vulnerable to persuasion when they learn that a group they encounter believes or acts in unison, regardless of whether those attitudes or behaviors align with their own (Cialdini, 1988, as cited in Cialdini, Reno, & Kallgren, 1990). Individuals behave in this conforming manner in order to maintain the norm established by others (Cialdini, Reno, & Kallgren, 1990). Cialdini's argument concerning consensus information is further substantiated by Festinger's (1954) social comparison theory, where individuals give much consideration to what others think and do in order to adjust their own opinions and actions. Clearly, the individuals in the current study were influenced by the consensus of others, as attitudes were more positive when comments were present, regardless of whether they genuinely agreed with them or not.

Further, the effects of consensus information have larger implications beyond user commentary found on websites. In their study regarding belief in stereotypical attitudes, Stangor, Sechrist, and Jost (2001) explained that consensus information even has potential to predict the relationship between attitude and behavior, as individuals are more likely to act in ways that affirm their previous behavior when they encounter attitudes or behaviors from others that align with their own than when they encounter attitudes and/or behaviors that challenge their own. Thus, this further explains why online websites continue to include post-message user commentary as a visible and central feature on their webpages. Websites aim to persuade others in hopes of successfully predicting the subsequent behaviors of consumers. Thus, the core content of websites (i.e., a news story or valued product for sell) prove to be only part of the overall product, as the attitudes of others have the power to change how

others think and respond about that information.

In reviewing my proposed interactions, based on the ELM, I expected that the strength of the comments would affect the attitudinal positions toward the proposed examination, but only for individuals who read the article proposing the examination to take place in next year, as it evoked high self-relevance. The individuals perceiving the article to be highly relevant would then be seeking out logic and facts in the planted comments to help him or her make an informed decision about the topic. One marginally significant two-way interaction was partially consistent with this prediction, as the interaction between comment strength and self-relevance was influenced primarily by the difference between attitudes reported for weak comments between the one-year and six-year conditions. More positive attitudes were reported after reading weak comments when the exam was to be implemented in six years and less positive attitudes were reported after reading weak comments when the exam would be implemented during the next academic year. While this interaction was meant to stress information processing in the central route, the observed interaction illustrates more of the aspects that define peripheral route processing, as attitudes did not differ significantly between high self-relevance conditions across comment strength. Thus, those in high self-relevance conditions did not report more positive attitudes after reading strong comments. As this interaction collapses across both three and nine-comment conditions, perhaps this unexpected direction of the self-relevance by comment strength interaction may speak to a larger issue regarding the use of the manipulation of comment quantity, primarily speaking to the use of all pro-exam user comments. Thus, even though individuals may have felt high levels of self-relevance, and had the ability to process information, they may not have clearly processed information within the central route as set forth by the ELM.

However, in contrast, those who felt low levels of self-relevance, but still had the ability to process, did clearly demonstrate the processing of information via the peripheral route as set forth by the ELM.

It was also expected, based on the ELM, that the number of comments would affect the attitudinal positions toward the proposed examination, but only for individuals who read the article proposing the examination in six years, as it evoked low self-relevance. These individuals perceiving the article to be irrelevant to them would then be more receptive to peripheral cues to help them make a decision about the topic, which did not emerge as a statistically significant interaction. Instead, an unexpected marginally significant interaction emerged between comment strength and comment quantity. This minor interaction was influenced by the participants' difference in reported attitudes, as more positive attitudes were reported when three strong comments were present than when nine strong comments were present. A possible reason for the observed interaction may be due to a demonstration of the classic theory of psychological reactance (Brehm, 1966, as cited in Burgoon, Alvaro, Grandpre, & Voulodakis, 2002). The underlying factor of psychological reactance states that individuals will respond in direct opposition as the persuader's intent when threats to autonomy are present. In the current study, the news article was written to serve primarily as a message to inform participants of the implementation of the comprehensive exam for seniors, as the news article states, "The President is in talks with the Board of Trustees to finalize the installment of this comprehensive examination." Thus, the implicit message from the article is that students have no power to inflict change on the implementation of the exam; the exam will be instated regardless of their attitude or behavior. Adding to this diminished sense of autonomy, participants were further provoked with user comments

stating strong and logical points to the positive utility of implementing such a comprehensive senior exam. Now, in explaining why only three strong comments may have evoked more positive attitudes toward the proposed exam than nine strong comments may lie in the lack of believability and credibility that stems from the overwhelming pro-stance of the manipulated comments.

Given that the proposed comprehensive examination may appear to be a stressor, regardless of its potential benefits, it becomes easy to see how the idea of implementing such a large-scale exam may not be a well-embraced proposition among students who have a host of other concurrent priorities to achieve, one of which is unquestionably a top goal for furthering one's education: graduation. Thus, this rationale explains why this proposition is ostensibly unfavorable among all participants, as no mean for survey responses per all 10 conditions approached even the midpoint. Further, perhaps seeing a sequence of pro-issue comments, particularly nine strong pro-issue comments for such an exam, may appear particularly non-credible, regardless of how self-relevant the participant perceived the news article to be. This threat to credibility was noted throughout participants' thought listing task across both the 1-year conditions, "The comments were generally positive. I would not expect my peers to be so cheerful about this requirement," and the 6-year conditions "All the comments were positive towards the exam, almost making them seem like they were made by people with an interest in implementing the exam, rather than real students." Therefore, according to the ELM, perhaps this threat to credibility may have influenced individuals to process information via the peripheral route even though both levels of perceived self-relevance and ability to process information may have been high. Thus, manipulating user comment proportions (i.e., including both positive and negative positions toward the issue,

while varying the proportion of each kind) as Lee, et al. (2008) have successfully done, or incorporating a question directed at perceived credibility, may have proved to be a more appropriate approach, especially for such a controversial idea in lieu of directly manipulating comment quantity, with all comments arguing a pro-exam stance, to persuade students about a large-scale exam.

In relating the current findings to the study from Petty, et al. (1981) on which the current study was replicated, their original study was performed during a time when the Internet was not a popular source for discovering newsworthy material. Now that individuals are equally able to easily and freely spread and partake in information, Internet users, specifically young adults in the current study, may provide insight into the significant factor of experiencing information online: Internet credibility. While it appears the ELM is applicable in online contexts, the results from the current study may suggest that those interested in examining the persuasion process in online contexts must consider all aspects of online content that might jeopardize the credibility of information found on webpages; a unique issue not present in 1981.

Additionally, the second 3-way ANOVA regarding the thought-listing task suggested non-significant interactions across factors, as well as non-significant main effects. This lack of effects may suggest that, within the current study, routes of persuasion demonstrated by participants were not clear-cut. Further, while the manipulations in the current study may have impacted attitude change, albeit slightly, they may not have successfully impacted a changing of thought processes distinguishing the route to persuasion participants utilized.

Finally, as discussed previously, the results from this study pose high levels of ecological validity, particularly in terms of the effect of consensus information. As observed

in the current study, consensus attitudes of online users can significantly alter attitudes of website visitors. Thus, according to these findings, a fair and balanced argument within the post-message comments would not be as effective as a one-sided argument across all users. By the same token, that consensus information is sensitive to context, as it may compromise the clear-cut routes of persuasion set forth by the ELM, as Internet credibility appears to be an important factor that participants give much consideration to regarding the webpages they do visit. Further, the self-relevance an individual perceives also has the power to determine what aspects of arguments will be persuasive to online users. Comment attributes are multifaceted as this unique discourse has many nuanced factors that can alter perceptions of messages, only two of which are manipulated in the current study. Thus, it is important to consider these factors in future research regarding the impact of post-message commentary, especially on websites. As individuals more frequently reference online websites to make informed decisions through formal news websites like CNN or Yahoo! as well as other sites indirectly built to serve as news outlets like Facebook, the importance of considering the factors that play a role in shaping how others think and feel about what they read grow, especially regarding information found on the Internet.

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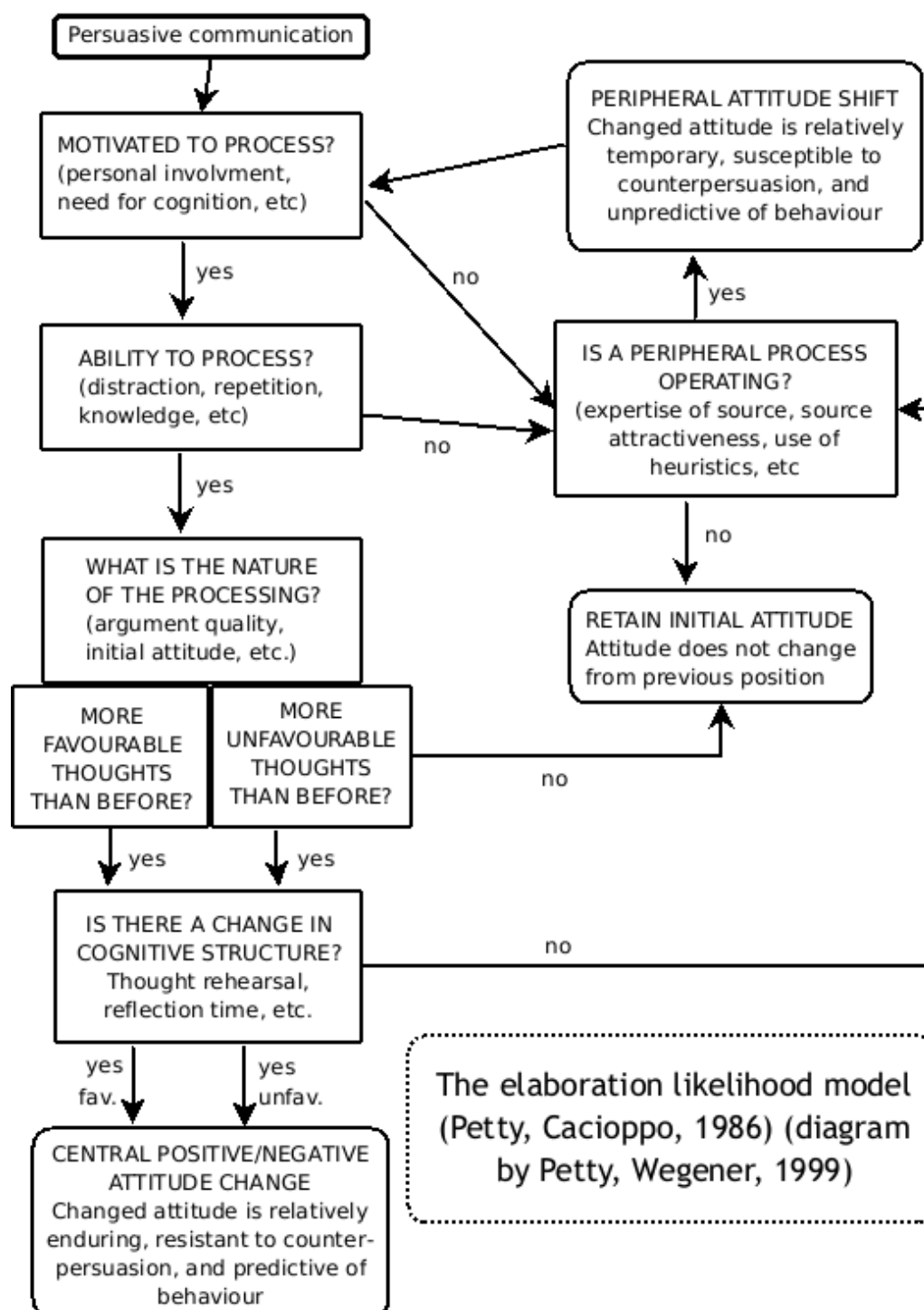
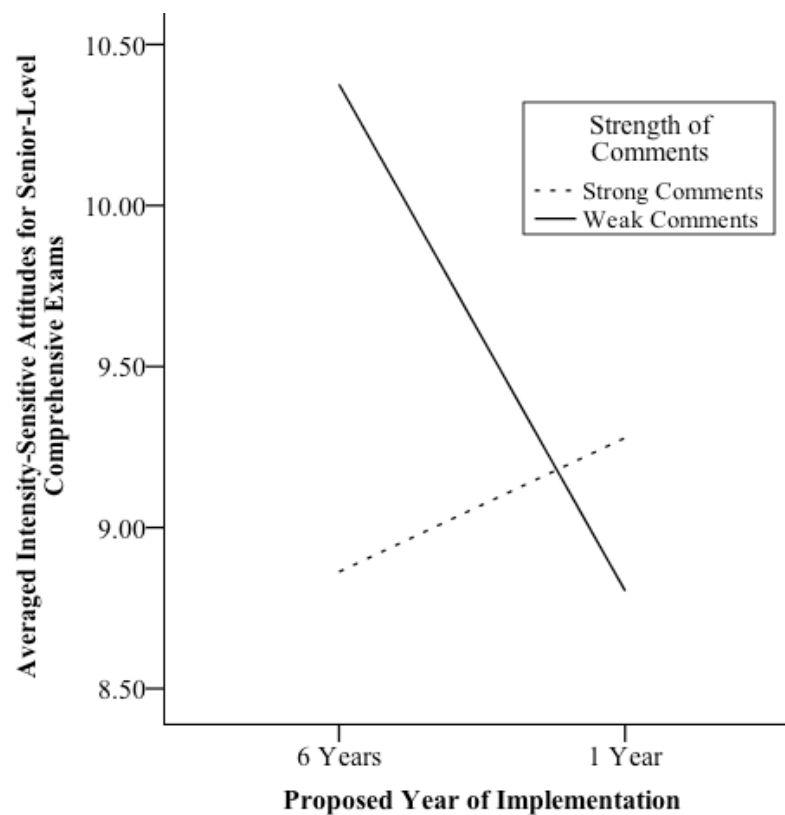
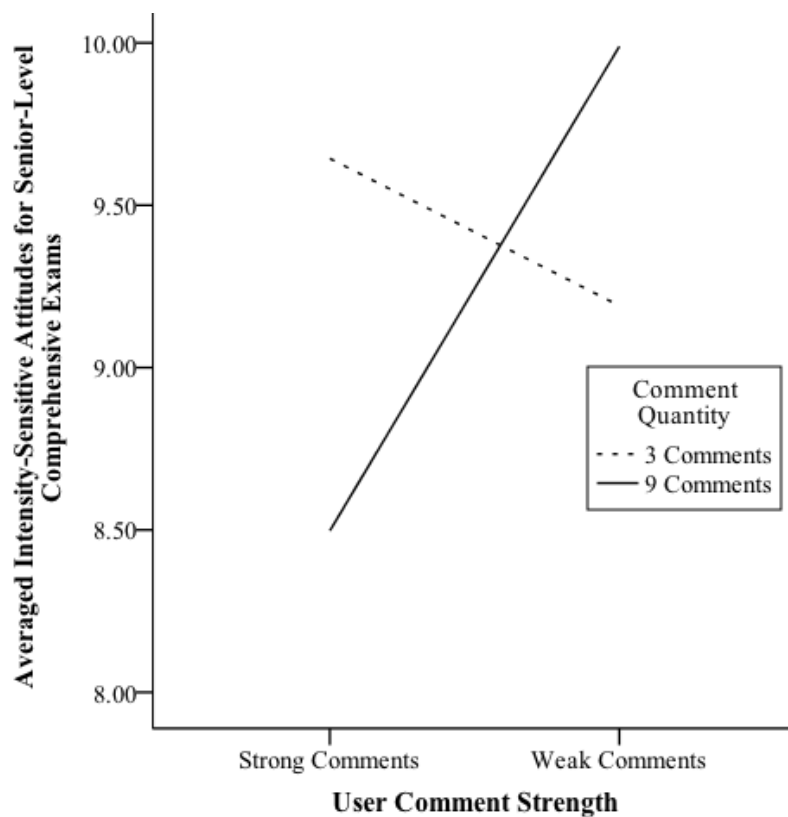


Figure 1. The Elaboration Likelihood Model flowchart depicting the persuasion process and outcomes via the two routes to persuasion (Petty & Wegner, 1999).



*Figure 2.* Average reported intensity-sensitive attitude toward comprehensive examinations for seniors across Comment Strength and Self-Relevance conditions.



*Figure 3.* Average reported intensity-sensitive attitude toward comprehensive examinations for seniors across Comment Strength and Comment Quantity conditions.

Table 1

*Dependent Measures as a Function of Proposed Year of Exam Implementation, Comment Quantity, and Comment Strength*

Variable	Comment Strength									
	Strong Comments					Weak Comments				
	Comment Quantity					Comment Quantity				
	3 Comments	9 Comments	3 Comments	9 Comments	No Comment Control	3 Comments	9 Comments	3 Comments	9 Comments	No Comment Control
<i>One-Year Implementation</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Comprehensive Exam Attitude	9.98	3.19	8.58	4.35	7.99	2.91	9.62	3.77	7.41	2.77
Thought-Listing Index	-0.36	0.34	-0.64	0.35	-0.43	0.45	-0.43	0.52	-0.56	0.35
<i>N</i>	19		17		23		21		19	
<i>Six-Year Implementation</i>										
Comprehensive Exam Attitude	9.31	2.89	8.42	2.84	10.39	4.07	10.36	4.02	8.70	3.42
Thought-Listing Index	-0.40	0.37	-0.47	0.41	-0.34	0.44	-0.38	0.43	-0.52	0.39
<i>N</i>	29		32		29		31		38	



## Appendix A



## Western President Interested in New Examination

Published: Fri, 1/25/2013 - 12:36

The President of Western has recently stated an interest in instating a new comprehensive examination for seniors at Western. The policy change is part of an academic reevaluation. The goal of the comprehensive exam is to test what the students have learned throughout their courses and "demonstrate proficiency in Western's general university requirements (GURs)" before graduation. The examination is scheduled to begin taking place beginning in six years. (or "beginning next year in the 2013-2014 academic year")

Nearly all undergraduates at Western, regardless of their major, share these core requirements. Thus, GURs embodies Western's belief that liberal education--education in breadth--is as important for informed and effective participation in contemporary life as specialized education. The president hopes that by instating this comprehensive exam, not only will students demonstrate proficiency in these GURs, but that students will be prepared for jobs after graduation.



Not surprisingly, students' have demonstrated mixed reactions to this news. Mark, a sophomore has stated, "I have enough to work on as a Biology major, don't give me another exam on top of it!" Conversely, Cindy, a junior stated, "I like the idea and I'm glad it's going to start taking place in six years (or "next year")! The whole point of going to college is to experience a challenge. It lets me know that I'm getting my money's worth by taking the exam."

Even among faculty members, the idea of a new examination has been met with uncertainty. James Howell, Associate Professor of History, stated that, "I'm concerned how this will affect students who have many competencies to achieve already." In contrast, Kim Needly, Associate Professor of Computer Science, stated, "I want my students to be ready for the job market after they leave Western. This is a good opportunity to prove that."

Currently, the President is still in talks with the Board of Trustees to finalize the instatement of this comprehensive examination.

## Appendix B

### (Strong Comments)

[Comment using...](#) ▼**Leah Thompson**

good idea! I've read that Ivy League schools like Yale have things like this.

January 28 at 3:32pm · · [Like](#) · [Comment](#)

**Alicia Hartley**

i'm willing to bet that grad schools accept more undergraduates who've passed these kind of exams than those who don't.

January 27 at 4:50pm · · [Like](#) · [Comment](#)

**Joyce Campbell**

i think I read somewhere that people who come from universities that have these kinds of exams get paid more. It wouldn't hurt to try it.

January 27 at 2:45pm · · [Like](#) · [Comment](#)

**Sarah Parks**

i heard that alumni would give more financial support if these exams were instated. I'm all for avoiding a tuition increase!


January 27 at 2:20pm · · [Like](#) · [Comment](#)

**Jason Cross**


i wouldn't doubt that by instating this exam, Western's school ranking would greatly improve.


January 27 at 12:02pm · · [Like](#) · [Comment](#)

## Appendix B (continued)





**Scott Allen**  
obviously, the exam would help push students to work harder, making them perform better on other things like standardized tests that are necessary in professional schools.

January 27 at 12:00pm ·  · [Like](#) · [Comment](#)





**Crystal Powers**  
i wouldn't doubt that by instating this exam, Western's school ranking would greatly improve.

January 27 at 11:23am ·  · [Like](#) · [Comment](#)




**Eric Steele**  
i'm not really interested in going to grad school, but I bet employers would be more impressed with my portfolio if I passed this exam.


January 26 at 7:30pm ·  · [Like](#) · [Comment](#)




**Jane Williamson**  
i'm all for instating this exam. As long as the exam improves grades in GURs as the article suggests, I think it will be worthwhile.


January 26 at 3:10pm ·  · [Like](#) · [Comment](#)

## (Weak Comments)





**Leah Thompson**  
from what I take from this article, it sounds like a good idea. I am willing to bet that most students wouldn't mind taking it, too!

January 27 at 4:43pm ·  · [Like](#) · [Comment](#)




**Alicia Hartley**  
i don't see what the big deal is with giving the exam here, it really doesn't sound that tough to me.

January 27 at 2:35pm ·  · [Like](#) · [Comment](#)



**Joyce Campbell**  
i've taken a lot of exams in the past and normally do well on them, so it doesn't seem like a big deal to me!

January 27 at 2:10pm ·  · [Like](#) · [Comment](#)

## Appendix B (continued)

**Sarah Parks**

i think it will be a worthwhile examination for the students here on campus. I wonder what kind of questions will be on the exam.

January 27 at 2:02pm ·  · [Like](#) · [Comment](#)

**Jason Cross**

obviously, this exam is a great idea to implement here at Western! My advisor told me once that he had to take an exam like this.

January 26 at 9:32pm ·  · [Like](#) · [Comment](#)

**Scott Allen**

i transferred from a university that had these kinds of exams. I really think people make a bigger deal about it than it's worth.

January 26 at 9:27pm ·  · [Like](#) · [Comment](#)

**Crystal Powers**

the exam sounds really interesting to me...but then again, I have always enjoyed taking exams!

January 26 at 7:12pm ·  · [Like](#) · [Comment](#)

**Eric Steele**

this is my third year at western. although the exam sounds daunting, it sounds like a fun challenge to me!

January 26 at 3:25pm ·  · [Like](#) · [Comment](#)

**Jane Williamson**

sounds like a good idea because many of my friends all support these exams!

January 26 at 2:45pm ·  · [Like](#) · [Comment](#)

**Comprehensive Examinations for Seniors are:**

Progress 

## Appendix D

22. Please list AND number each of FIVE thoughts that occurred to you as you read the online webpage. Your thoughts may have been about the news article, author, commentary, or anything else that crossed your mind while you were reading the material.

---

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Back Next

## Appendix E

We're nearly done! Please indicate your position on the following statements as well as your commitment to each response.

23. I believe the topic of the news article poses high relevancy to my own education.

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

24. How committed are you to your previous response?

Low Medium High

☐ ☐ ☐

25. The comments that followed the news article are logically sound.

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

26. How committed are you to your previous response?

Low Medium High

☐ ☐ ☐

27. I am familiar with comprehensive examinations.

Strongly Disagree Strongly Agree

☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

28. How committed are you to your previous response?

Low Medium High

☐ ☐ ☐

29. Finally, what do you believe the researcher was attempting to study?

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